the "tornadoes" of the Gold Coast (which are merely severe squalls) a fall of the barometer occurs. In some squalls, especially in the Indian and China seas, a change of wind occurs to nearly an opposite point of the compass, and in these instances there is sometimes a diminution of pressure[1] during the passage of the squall. These squalls I should regard as small typhoons.

The clouds which mark the front of an actual typhoon, as described by Dampier[2] and subsequent navigators, seem to be very similar to those which accompany the true squall, wherever observed. These consist of a dense curtain of ice-cloud in the higher regions of the atmosphere, usually permeated, except in the extreme rear, by mountainous cumuli from beneath, and having, when viewed at a distance, a very white and shining appearance. In the final stage of the squall, when it is diminishing in severity, these cumuli commonly disappear. A watchful outlook for these clouds, not least of all when coming off a high windward shore, may save many sailing vessels, as it might in all probability have saved the *Eurydice*, from destruction. W. CLEMENT LEY

NOTES

As we anticipated some weeks ago (p. 41), Prof. Lord Rayleigh has been nominated by the Council of the British Association as President for the Meeting at Montreal in 1884. The death of the late Prof. H. J. S. Smith having caused a vacancy among the vice-presidents elected at Southampton for the meeting at Southport in the present year, the Council have nominated Dr. J. M. Dawson, C.M.G., F.R.S., Principal of McGill College, Montreal, to be a vice-president.

PROF. HUXLEY'S Rede Lecture will have for its subject "The Origin of the Existing Forms of Animal Life: Construction or Evolution?" It will be delivered in the Senate House (Cambridge) on Tuesday next at noon.

THE death is announced of M. Charles Bresse, on May 22, at the age of sixty-one years. He was, since 1855, Professor of Mechanics in the School of the Ponts et Chaussées, and also for the last few years at the École Polytechnique.

A SERIES of conferences will be held in connection with the Fisheries Exhibition, in which the foreign commissioners, jurors, and others connected with or visiting the Exhibition, will be invited to take part. The first meeting of the Congress will be held on Monday, June 18, at 12 noon, when Prof. Huxley will deliver an introductory address. H.R.H. the Prince of Wales, K.G., has graciously consented to read a paper by H.R.H. the Duke of Edinburgh, K.G., entitled "Notes on the Sea Fisheries and Fishing Population of the United Kingdom," on Tuesday, June 19, at 12 o'clock. At all other conferences, the chair will be taken by the appointed chairman at 11 o'clock a.m. precisely. Papers will be read, and discussions on them will follow. The conferences will be held on Mondays, Tuesdays, Thursdays, and Fridays.

THE Company of Grocers have announced as the matter of competition for the first quadrennial discovery prize of 1000*l*. the following problem:—"To discover a method by which the vaccine contagium may be cultivated apart from the animal body, in some medium or media not otherwise zymotic: the method to be such that the contagium may by means of it be multiplied to an indefinite extent in successive generations, and that the product after any number of such generations shall (so far as can within the time be tested) prove itself of identical potency with standard vaccine lymph." The prize is open to universal competition, British and foreign. Competitors for the prize must submit their respective treatises on or before December 31, 1886, and the award will be made not later than May, 1887. In relation to this prize, as in relation to other parts of the Company's scheme in aid of sanitary science, the Court acts with the advice of a scientific committee which at present consists of the following members:—Messrs. John Simon, F.R.S., John Tyndall, F.R.S., John Burdon Sanderson, M.D., F.R.S., and George Buchanan, M.D., F.R.S.

A CORRESPONDENT in West Australia writes to us that the Exploring Expedition to Kimberly District, North-West Australia, to which Mr. E. T. Hardman, of the Geological Survey of Ireland, is attached as geologist, reached Roebuck Bay, Kimberly (lat. 18° ·10′ S., long. 122° E.) on April 9, after a favourable voyage from Fremantle of ten days; all well, with the exception of a native who, in a fit of delirium, jumped overboard and was lost. Mr. Hardman proceeds with Mr. John Forrest, Surveyor-General, a well-known and experienced explorer, on a preliminary examination of the district for some months, and will then accompany the main party about to make a trigonometrical survey of the country along the Fitzroy River traced in 1879 by Mr. Alexander Forrest. The party, which consists of thirty-two, all told, with fifty horses, left Fremantle in the *Macedon*, on March 25, but were shipwrecked on Rottnest Island, and subsequently went on in the steamer *Rob Roy*. The field-work will be continued until the middle of next November, and will probably be resumed next year. Previous explorers pronounce this district to be one of the best in West Australia.

WE have received a communication from Herr Sophus Tromholt, dated Bossekop, May 18, in which he informs us that his work at Kautokeino having been finished he has paid a visit both to the Finnish station at Sodankylä and the Norwegian at Bossekop. Herr Tromholt now intends to proceed to Bergen, and promises, when settled, to send an account to NATURE of his final researches on the aurora borealis. He states, however, that at neither of the above-mentioned stations has any photograph of the aurora been obtained. Next winter, Herr Tromholt informs us, he will spend in Iceland, in order to proceed with his studies of the aurora borealis there, chiefly on the principle laid down by Prof. Lemström, and with the apparatus invented by the latter.

SIR JOHN LUBBOCK has given notice that he intends on Friday three weeks to draw attention to the fact that the Minister whose duty it is to bring forward the Educational Estimates has no power to appoint officers, and to move that it is desirable that there should be a separate department of education.

IT is stated that M. Jules Verne, the world-known novelist, will offer himself as a candidate to fill the chair vacated in the Académie Francaise by the recent death of M. Jules Sandeau.

AN Exhibition of Hygienic Dress and Sanitary Appliances, intended to illustrate as far as possible the aims and objects of the National Health Society, was opened by the Lord Mayor on Saturday afternoon, in Humphreys Hall, Knightsbridge. The Exhibition, which will continue for a fortnight, includes clothing, food products, everything connected with the sanitation of the house and hygienic decoration, appliances for the sick-room, home nursing, and home education, industrial dwelling and cottage hygiene, heating, lighting, and cooking apparatus, fuel, &c. Perhaps, however, the greatest attention will be devoted to the stands of the Rational Dress Society, and another close to it, where are shown examples of ladies' dresses made on purely hygienic principles.

TOURISTS with entomological proclivities who may be about to visit the Alps, Pyrenees, Norway, or other parts of Europe, will find Dr. H. C Lang's "Butterflies of Europe" (L. Reeve and Co.) very useful. So far as it has gone, indeed, it is the best book on the subject in the English language. Part xiii., just published, brings the work down to the larger Fritillaries, and is one of the most satisfactory so far as the plates are concerned.

---

[1] Schück. *Annalen der Hydrographie*, March, 1877; *Quart. Journ. Met. Soc.* vol. iv p. 78.

[2] "Voyages,' ii. 35.

THE Russian Chemical Society having established a competition for the best lamps for burning the intermediate oils of the Caucasian naphtha, which have a density from 0·860 to 0·875, has found that the four competing lamps satisfy the required conditions, the best of them being that of M. Kumberg. According to experiments made by Prof. Mendeléeff, the new lamps burn not only the intermediate oils but also a purified mixture of all distillations, the heavy greasy oils which have a density of 0·910 at 15° included. Like the American naphtha, the Baku naphtha would thus yield more than two-thirds (nearly three-quarters) of its weight of oils available for lamps, the oils from this last being far less dangerous than those of the former. It yields, besides, nearly 30 per cent. of greasy oils of great value.

M. YANKOVSKY mentions the disappearance of the spotted deer from the neighbourhood of Vladivostok. Before 1877 they were so numerous that flocks numbering forty and fifty were often seen, and their meat was cheaper than beef. Since the snowy winters of 1877 and 1878, however, during which they were hunted on a great scale, they have become very rare. It seems that other causes too have contributed towards diminishing their number. In 1878, after a great fire which consumed the whole of the depression around the lake of the Slavyansky peninsula, M. Yankovsky saw the valley dotted with the bodies of deer and antelopes. It will be a pity if a succession of mild winters does not give an opportunity to the spotted deer of multiplying again, as their number is already very limited, and the region they inhabit is very restricted, as it comprises only the sea-coast from Corea to the Bay of Olga.

NOTWITHSTANDING the active pursuit of the tigers in the South Usuri region, their number does not much diminish. In a communication to the Irkutsk branch of the Russian Geographical Society it is stated that in 1880 and 1881 no less than nine tigers were killed on the small space of thirty-five miles long, on the western coast of the Bay of Amur; and at the head of this bay five tigers were perceived at one time. The zoologist of the Society, M. Yankovsky, writes also that the South Usuri tigers do not seem to abstain from eating corpses and digging out graves as is generally believed.

ON May 19, at about 10 p.m., a remarkable aurora borealis was observed at Ludvika, in Sweden. It began as a faint band of light parallel with the horizon, which gradually grew broader and broader. The extraordinary feature of the phenomenon was, however, that this band had the appearance of an ice-covered lake on which the moon was shining. Promontories and shores covered with trees were seen, and also the faint outlines of farms. This phenomenon lasted about ten minutes, when the aurora changed into a suffused pink luminosity, like that of clouds near the setting sun.

A STRONG earthquake was felt throughout the state of Antioquoia at 6 p.m. on the 8th ult. Little damage was done in Medellin, although much alarm was caused and the walls of the cathedral were injured. In the town of Antioquoia the façade of the cathedral was thrown out of plumb, many of its columns were thrown down, and all the houses suffered more or less. In Santa Rosa the church steeple was injured and a number of houses rendered uninhabitable. In Aquadas the town hall was destroyed, and at Abejirral the church and a number of houses were injured. It was feared more disasters had occurred in districts which had not been heard from. The shock lasted more than two minutes, and appeared to move from the north to the south. This same shock was felt all over the isthmus, all along the Atlantic coast of Columbia, doing damage only at the mouth of the Atrato, so far as reported up to the present, and in the Magdalena Valley. It appears to have been the sharpest and most widely experienced since the great one of September 7 last year.

TELEGRAMS from Batavia state that Mount Karang in the Straits of Sunda is in full eruption. The shocks are heard several hundred miles away. It is now two hundred years since the last eruption of this volcano. The mountain is situated on the island of Krakatoa, near Anjer in the Straits of Sunda, and as it is in the path of sailing vessels from Europe to the East, which generally call at Anjer point for provisions and orders, we may shortly expect details of the eruption.

A CORRESPONDENT writes:—During the last ten years much has been written on the origin of the jade objects found in America and Europe, no raw materials of the stone having yet been discovered out of which the articles could have been manufactured. Prof. H. Fischer of Freiburg in Baden therefore brought forward the hypothesis, supported by several of his scientific brethren, that the jade objects of America had been transported thither from Asia in prehistoric times, when Mongolian tribes settled in the New World, and that the intercourse of trade had later acted in the same manner. For Europe, where thousands of those objects have been found, the Aryans had done this service, when wandering from the very heart of Asia to the west, the source of the jade objects of both continents being Asia, where deposits of the mineral are known to occur in Siberia, Turkestan, and Burmah. Recently Dr. Meyer of Dresden has energetically opposed these views in a large folio work containing many plates, and has come forward with the opinion that the jade sources of Europe and America yet remain to be discovered. As to America we are glad to hear that this much simpler and more reasonable explanation of the problem has now been verified, the Smithsonian Institution of Washington lately having received from Louisiana an immense number of objects of jade, among them implements, knives, and other articles, many having an admirably high finish, and with them a considerable quantity of the stone of which the objects were made. We do not doubt that similar discoveries may soon be expected in Europe, especially in Switzerland, and that we shall succeed in ascertaining the exact districts where the mineral is to be found.

WE are glad to see that there is at last some prospect of the immediate publication of Mr. W. Colenso's Maori-English Lexicon, which was submitted to the New Zealand Government nearly eight years ago. A specimen sheet of twenty folio pages has recently been printed and presented to both Houses of the General Assembly by command of the executive authorities. From this specimen it is evident that the work is of an encyclopædic character, embodying a vast amount of information collected from original sources on the languages, ethnology, traditions, religions, habits, and customs of the Polynesian races. The plan is at once simple and comprehensive. The various meanings of each word are first given in large type, and each meaning is then illustrated by one or more passages in small type from the native poems, myths, legends, proverbs, and colloquial usage. Thus nearly four pages are devoted to the different significations and grammatical applications of the single word *a*, which plays such an important part in all the Polynesian dialects. To the particle *atu* as many as thirty distinct meanings are assigned, and these meanings are illustrated by no less than seventy-two quotations from the various sources above indicated. In some cases the quotations are Englished, and it would certainly be satisfactory if this could be done uniformly. In the English-Maori part the same plan is adhered to, only here quotations illustrating the different senses of the English words are omitted as unnecessary. Should the work be carried out on these lines it will enable the student to wait somewhat more patiently for the appearance of Mr. Whitmee's long-promised Comparative Dictionary of the Polynesian Languages.

THE Minister for Postal Telegraphy will ask from the French Parliament the credits required for connecting by a cable Saigon to Haïfong, the principal seaport of Tonquin, and Haïfong to Hanoi by another line laid down in the bed of the Red River.

AT the Polytechnic, which is now occupied by a Young Men's Christian Institute, there was recently an exhibition of drawings, and works of art and manufactures, executed wholly or in part by the members of the institute and the students at the numerous classes held there. Most of the exhibits show proofs of the usefulness and success of the institution. The exhibition included also many valuable works of art and a very costly and interesting collection of Japanese, Chinese, and Indian curiosities lent for the occasion by Mr. Quintin Hogg and other friends of the institute.

THE Oxford University Junior Scientific Club held a very successful *conversazione* in the University Museum on Friday evening last.

PROF. DEWAR, F.R.S., will give an experimental discourse on the Chemistry of the Electric Discharge at the last Friday evening meeting on June 8 at the Royal Institution.

THE additions to the Zoological Society's Gardens during the past week include two Pig-tailed Monkeys (*Macacus nemestrinus* ♂ ♀) from Sarawak, presented by His Highness the Rajah of Sarawak; an Egyptian Cat (*Felis chaus*) from India, presented by Mr. W. R. Glyn Griffiths; three Common Kingfishers (*Alcedo ispida*), British, presented by Mr. Frederic Houghton; a Barbary Ape (*Macacus inuus*) from North Africa, four Elliot's Pheasants (*Phasianus ellioti* ♂ ♂ ♀ ♀) from China, five Ceylon Terrapins (*Clemmys trijuga*) from Ceylon, four Bungoma River Turtle (*Emyda granosa*) from India, four Lacertine Snakes (*Cœlopeltis lacertina*), a Horseshoe Snake (*Zamenis hippocrepis*), a Pleurodele Newt (*Pleurodeles walti*), South European, a Red-legged Partridge (*Caccabis rufa*), European, deposited; a Buffon's Touracou (*Corythaix buffoni*) from West Africa, two Bronze-winged Parrots (*Pionus chalcopterus*) from South America, two Varied Hemipodes (*Turnix varia*) from Australia, two American Siskins (*Chrysomitris tristis*) from North America, two Black Larks (*Melanocorypha yeltonensis*) from Siberia, a Cerastes Viper (*Vipera cerastes*) from Egypt, purchased.

LOCAL SCIENTIFIC SOCIETIES

FOR some years past there has been a growing expression of desire of local scientific societies to be officially represented at the meetings of the British Association. The question is one of considerable difficulty and delicacy, and though it has been the subject of frequent discussion and some legislation, no measure has yet been carried that is satisfactory to all parties. Last year the subject was referred to the Council, who appointed a special committee, and this committee made on Tuesday its preliminary report. They asked in it for permission from the Council to circulate the report among the local societies in order to obtain from them that response which is needed before the committee can feel themselves in a position to report finally, and *a fortiori* before the Council can take their report into consideration. This permission has been granted, together with that of free publication. A copy of the report will consequently be shortly sent to the various societies by the secretary, Mr. H. George Fordham, Odsey Grange, Royston, Cambridgeshire, with the request that their replies will be forwarded to him. But as the subject presses, and as the season is advancing and the annual sessions of societies are drawing to a close, the best method of bringing the report before the members of those societies is through the columns of NATURE. I therefore forward it at once. FRANCIS GALTON

June 6

Preliminary Report of the "Local Scientific Societies' Committee, consisting of Mr. FRANCIS GALTON (*Chairman*), *the* Rev. Dr. CROSSKEY, Mr. C. E. DE RANCE, Mr. H. G. FORDHAM (*Secretary*), Mr. JOHN HOPKINSON, Mr. R. MELDOLA, Mr. A. RAMSAY, Prof. SOLLAS, Mr. G. J. SYMONS, *and* Mr. W. WHITAKER, *appointed by the Council in compliance with the following resolution referred to the Council by the General Committee:*

"That the Council be empowered to appoint a Committee, as recommended in their Report adopted by the General Committee on August 23, in order to draw up suggestions upon methods of more systematic observation and plans of operation for Local Societies, together with a more uniform mode of publication of the results of their work. It is recommended that this Committee should draw up a list of Local Societies which publish their proceedings."

The Committee have communicated with all the Societies known to them which appear to fall under the designation of "Local Societies which publish their proceedings," giving to this definition a somewhat liberal interpretation, and they submit a tabular list of the publications with other particulars of those which have furnished replies. These societies are about 170 in number, and seem from their rules and publications to be centres whence local scientific information may conveniently be obtained.

The Local Societies differ widely in character. Those which are established in large towns, and are not particularly well situated for carrying on systematic local investigations, are often of high scientific rank, and their affairs are administered in a business-like manner by a regular staff. On the other hand, there are numerous smaller societies and field clubs, scattered over the country, which are excellently placed for conducting local investigations, but whose organisation is so incomplete that it has often been difficult to discover their official addresses.

In some parts of the country the smaller societies either group themselves into what is practically a federation, or else affiliate themselves to some large society in their district, and the Committee think that if the Local Societies generally could be induced to group themselves round what might be described as local sub-centres, it would not be difficult to devise methods of uniting the representatives of those sub-centres in the performance of interesting and important duties during the meetings of the British Association, with the final effect of establishing systematic local investigation throughout the country, and uniformity in the modes of publishing the results. The recommendations the Committee are about to make will tend wholly in this direction, because, although they have considered many plans of fulfilling their instructions in a direct manner that perhaps look well on paper, no plan recommends itself to them as superior to this indirect method in its capacity of producing valuable and durable effects.

The Committee do not suggest any new topics for systematic investigation, but confine themselves to giving a few examples of what these topics are, taken from a circular printed last year by a committee appointed at a conference of delegates of scientific societies: (1) *Underground Waters* (to record the height of water in wells, and its variations in level in different parts of the country). (2) *Erratic Blocks* (to record their position, height above sea, lithological character, &c.). (3) *Underground Temperature* (to investigate the rate of its increase downwards in various localities). (4) *Rainfall* (its measurement). (5) *Periodical Natural Phenomena* (to record time of flowering of certain plants, arrival of certain migratory birds, appearance of certain insects). (6) *Injurious Insects* (to record their appearance in unusual numbers, the injuries they cause, and the degrees of success in preventing them). The first three of these investigations were set on foot by Committees of the British Association, and the last three by societies or private individuals.

It can hardly be doubted that numerous systematic investigations of a local character will from time to time be carried on, and that their successful prosecution would result in important gains to science. Neither does it appear doubtful